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Awareness of, Demand for, and Satisfaction with the West Africa Health Informatics Team (WAHIT)

Midline Study (Burkina Faso and Togo) Analytical Report

December 2018 (revised January 2019)

This report was produced for review by the United States Agency for International Development (USAID). It was prepared by International Business and Technical Consultants, Inc. (IBTCI) under the Evidence for Development (E4D) Project.

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DISCLAIMER

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ACRONYMS

CBW	Community Based Health Workers
CDC	Centers for Disease Control and Prevention
CoE	Centre of Excellence
DEC	Development Experience Clearinghouse
DFID	United Kingdom Department for International Development
DHIMS2	District Health Information Management System
DHIS2	District Health Information Software 2
DHMIS	District Health Management Information System
DQA	Data Quality Assessment
E4D	Evidence for Development
ECOWAS	Economic Community of West African States
eLMIS	electronic Logistics Management Information System
FETP	Field Epidemiology Training Program
GHS	Ghana Health Service
HIS	Health Information System
HISP	Health Information Systems Program
HMN	Health Metrics Network
HP+	Health Policy Plus
IDSR	Integrated Disease Surveillance Response
IHRIS	Interconnecting Human Resources Information System
IP	Implementing Partner
IT	Information Technology
KI	Key Informant
KII	Key Informant Interview
MDG	Millennium Development Goals
M&E	Monitoring and Evaluation
MOH	Ministry of Health
MOU	Memorandum of Understanding

NGO	Nongovernmental Organization
NHMIS	National Health Management Information System
NSP	National Health Policy
OR	Operational Research
PDNS	National Health Development Plan
POR	Prospective Operations Research
PPME	Project Planning Monitoring and Evaluation
RMNCH	Reproductive, Maternal, Newborn, and Child Health
STTA	Short-Term Technical Assistance
SMS	Short Message Service
SOP	Standard Operating Procedure
SOW	Scope of Work
TA	Technical Assistance
TCN	Third Country National
TOR	Terms of Reference
UiO	University of Oslo
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
WAHIT	West Africa Health Informatics Team
WAHO	West African Health Organization
WHO	World Health Organization
WHO AFRO	World Health Organization Africa Regional Office

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EXECUTIVE SUMMARY

Introduction

The Health Information System (HIS) is a fundamental piece of health infrastructure. A strong HIS provides reliable data to policy makers (governments, development partners, service providers, and communities) to target health interventions, allocate resources, and effectively respond to disease outbreaks. A properly functioning HIS ensures that vital information gets into the right hands when needed, enabling policy makers, health managers, and individual health care providers to make informed choices about everything, from patient care to national budgets.

In the past few years, there has been considerable interest by both countries and the donor community in supporting HIS, and the focus has been on supporting existing national HIS as opposed to creating parallel mechanisms. The World Health Organization (WHO), for example, established the Health Metrics Network (HMN) in 2005 to support and improve HIS in developing countries.¹ More recently, there have been efforts to support initiatives in favor of measurement and accountability in health, with a summit on this topic organized in 2015 jointly by the United States Agency for International Development (USAID), WHO, and the World Bank as the international community prepared for the post-Millennium Development Goal (MDG) era.² The Health Information Systems Program (HISP) of the University of Oslo has been involved in HIS reform since the 1990s. They have been supporting the development of the District Health Information Software 2 (DHIS2) commonly used in many countries in Asia and Africa, including West Africa. In fact, the 2012 Economic Community of West African States (ECOWAS) Health Policy and Strategy proposed the establishment of an HIS Centre of Excellence in the region. Given the role that the West African Health Organization (WAHO) plays in the region, it makes sense for that center to be located within this organization.

The Ebola outbreak demonstrated the need to continue supporting HIS development in West Africa and to improve timely case notification, geographic spread, health service availability, and other relevant health data. The Ebola outbreak also demonstrated the need to rely on a team of health informatics experts from West Africa and/or located there, who are familiar with HIS and the cultural context in that part of the world and who can travel easily to different countries in the region to provide any support needed. Reliance on technical assistance in this field from other parts of the world makes any technical assistance (TA) model less sustainable over the long run. The establishment of the West Africa Health Informatics Team (WAHIT) was envisioned to both complement and supplement any existing health informatics technical assistance activities in the region. WAHIT was designed to do the following:

- Make immediate improvements in national and regional HIS that will help strengthen public health systems;
- Build local software engineering capacity to support long-term sustainability of HIS investments in the region.

WAHIT is led by WAHO, with funding from the U.S. Agency for International Development, and technical support from the USAID's Health Policy Plus (HP+) Project. WAHIT was established to provide technical leadership and support in

¹ Poppe, O. 2012. Health Information Systems in West Africa. Department of Informatics. University of Oslo.

² MA4. (2015). The Measurement for Health Measurement and Accountability. http://www.searo.who.int/entity/health_situation_trends/the-roadmap-for-health-measurement-and-accountability.pdf?ua=1

³ Cenciarelli, O., Pietropaoli S., Carestia M., D'Amico F., Sassolini A., Di Giovanni D., Rea S., Gabbarini V., Tamburrini A., Palombi L., Belleci C., and Gaudio P. (2015). Ebola Virus Disease 2013–2014 Outbreak in West Africa: An Analysis of the Epidemic Spread and Response. *International Journal of Microbiology*, Volume 2015 (2015), Article ID 769121, 12 pages.

HIS for Ministries of Health (MOH) in ECOWAS countries, with a priority given to Ebola-affected countries: Guinea, Liberia and Sierra Leone.

USAID/WA tasked the West Africa Evidence for Development (E4D) activity to conduct a Prospective Operations Research (POR) to provide research-based evidence on trends in awareness of, demand for, and satisfaction with WAHIT and its services.

POR Study Objectives

The **main goal** of this POR Midline was to assess *trends* in awareness of, demand for, and satisfaction with WAHIT and its services in two non-Ebola-affected countries (Burkina Faso and Togo) already benefitting from WAHIT's TA. The study was conducted after WAHO and WAHIT team had conducted several activities in Burkina Faso and Togo.

Relevant Research Questions for Baseline

Relevant research questions to be answered by the midline measure of the POR and the focus of this report include the following:

- How aware of WAHIT are relevant MOH personnel?
- Whom do MOH officials trust and prefer to address HIS technical challenges to?
- How do relevant stakeholders outside MOHs perceive WAHIT and this model?
- What are WAHIT's operational strengths, weaknesses, and challenges?
- How relevant to the level of awareness and demand is WAHO's oversight of WAHIT?
- Is the partnership (WAHO, Palladium, and USAID) set up for implementing WAHIT effective?

Methods

The present Prospective Operations Research (POR) was preceded by a baseline study that was conducted in three countries (Guinea, Sierra Leone and Ghana) and will be followed by a final study in all 5 countries. It is a continuous evaluation of the acceptance, achievements and challenges of the WAHIT model through the implementation of the activity. It essentially used qualitative survey and the information was collected using a semi-structured interview guide through in-depth interviews with key informants. The report relied on information from interviews with a purposive sample of 32 key informants/stakeholders in two non-Ebola-affected countries (16 in Burkina Faso and 16 in Togo).

The sample of KIs included actors at the national level, notably, the managers and specialists of the HIS at the MOH and technical and financial partners involved in the reinforcement of the HIS (see list of participants in annex).

The target audiences for this research are USAID, including the Africa Bureau, the Global Development Lab Team supporting Ebola activities, and the West Africa Regional Mission; the West African Health Organization (WAHO); the Ministries of Health (MOH) in the two countries; Palladium (HP+), their donors and local partners in health and in other sectors using the health information system (HIS).

USAID/WA officially introduced the study and researchers to study participants in Togo and Burkina Faso. E4D, including its research team, followed up with emails and phone calls to secure interviews. Most of the key informants (KIs) responded immediately and expressed their availability and willingness to participate in the survey.

The data collection tools were reviewed to integrate WAHIT's satisfactory survey questions, and were pre-tested, amended and validated before actual data collection began. The first interview was conducted in Burkina Faso on August 24, 2018 with the Director of the Direction des Systèmes d'Information Sanitaire/Ministère de la Santé (DSIS/MS). The

last interview was conducted in Togo on September 28, 2018 with the representative of the Global Fund/HIV activity in Lomé.

Interviews were taped, transcribed, translated into French/English when needed, and analyzed using a thematic grid developed by randomly selecting three interviews from each country and identifying initial themes. The analysis grid was expanded as additional topics emerged. Data were entered in NVivo 12 and word clouds were created for two topics: the WAHIT model and WAHO's oversight of WAHIT.

Key Findings

Profile of KIs participant to the POR?

The KIs were mainly Ministry of Health officials at several levels of decision-making. There were specialists in data management and HIS managers. Added to this were the focal points or those responsible for the technical and financial partners involved in the HIS. All KIs had a university education and were predominantly male (out of the 32 KIs that were interviewed, only four were women). In Burkina Faso, 69% (11/16) of KIs reported having received specific training in HIS, compared to 75% (12/16) in Togo. These trainings included the use of DHIS2, data management, data processing, development of databases as well as specific computer trainings. WAHIT and MEASURE Evaluation were mentioned by the respondents as the main providers of those trainings. Half of the KIs reported having received specific training in epidemic surveillance and reporting of diseases in Burkina Faso and Togo. These trainings were mostly on integrated disease surveillance and response and provided at the health facilities. However, some participants reported having benefited from trainings organized by CDC on epidemiological surveillance and surveillance-oriented information system.

How aware of WAHIT are relevant MOH personnel?

In general, the awareness of WAHIT was high in Burkina Faso and Togo; more than half of the KIs had already either heard or had worked with at least one member of WAHIT. In addition to being informed about the existence of WAHIT, most of the respondents had been in direct contact with WAHIT team members. Recurring expressions were: "WAHIT supports the health information system", "WAHIT has strongly supported HIS, improving the transmission of reports in Burkina Faso". The respondents in both countries who were aware of WAHIT were unanimous on the relevance of WAHIT's technical assistance to support the HIS.

"It must be said that, truly, among all our partners WAHIT is the only one organization that has technicians who can be called upon to come on site for capacity building. The other partners are mainly providing financial support. WAHIT has the technical expertise. WAHIT is always there to support us, in particular providing technical assistance while building the capacity of the national actors." Burkina Faso KI.

This is different from the baseline study conducted in Guinea and Sierra Leone where the knowledge of WAHIT was limited with vague ideas about the mission and scope of work. This is understandable because the baseline study in Guinea and Sierra Leone was conducted when WAHIT was just starting its operational activities. The present midline study in Togo and Burkina Faso was conducted at a time when WAHIT's activities had already started on the ground, giving it more visibility. It is obvious that WAHIT's awareness is positively improving throughout the project life cycle and will continue to improve as activities increase. However, the findings from the study show that if the awareness has risen among the MOH partners in both countries, then efforts should be made to increase the knowledge and integration of WAHIT's activities of other national and international development partners involved in the reinforcement of the HIS.

Whom do MOH officials trust and prefer to address HIS technical challenges?

As for Guinea and Sierra Leone, there are various donors and partners providing support for the HIS in Togo and Burkina Faso. These partners support both countries to digitize different subcomponents of the HIS and integrate them into one single platform: DHIS2. Most of these efforts were initiated in 2013 and are currently underway with various levels of progress. The efforts are intended to collect, clean, transmit, analyze, and use data that pertain to different domains: service statistics, disease surveillance, supplies, and human resources. Many MOH officials in both countries mentioned WAHIT's supranational nature, which would allow the transfer and sharing of knowledge, experience and lessons learned among the countries in the sub-region. WAHIT provides TA in countries that share the same difficulties, same challenges, thereby increasing the possibility of sharing best practices. WAHIT's approach is recognized as unique, new and beneficial to HIS stakeholders. The KIs indicated that WAHIT has a multidisciplinary team with proven skills/expertise in technology and good knowledge of the West African health information system environment.

"Frankly, as I told you, their approach is really new. Their approach is new and very beneficial because they do not need to rely on external expertise to come and do the stuff. With other partners, when you express your needs, even if they accept to support, maybe it is financial support or they will be hiring a cabinet to come and do the work, which is not the case for WAHIT. Because they are people who are involved, they work in a field that talks about health, so they master the concepts and their applications (...), in any case, I find that WAHIT's approach is really new and unique." Burkina Faso KI

Most of the KIs in Burkina Faso highlighted WAHIT's responsiveness to requests for assistance. They were appreciative of the procedures in place for requesting TA, the availability of the team, their promptness to respond to requests and the skills transfer approach during the technical assistance. In the baseline study conducted in Guinea and Sierra Leone, most of the respondents recommended that WAHIT should create its own place and niche among all these existing TA by complementing existing structures. In Togo and Burkina Faso, WAHIT is sometimes seen and accepted as the only option. The epidemiological history of these different countries, as well as the difference in time (for the studies) could provide a strong explanation for the differences in perception. Indeed, with the Ebola outbreak in Guinea and Sierra Leone, the two countries received (and still receive) diverse and multiple TAs which is not the case in Togo and in Burkina Faso. Moreover, the baseline study was conducted in Guinea and Sierra Leone during the early phase of WAHIT's activities, while in Togo and Burkina Faso, opinions of the respondents were based more on the reality and individual/collective experiences with WAHIT. The bottom line is that all the countries aspire to TA which leads them to be independent of multiple systems/subsystems and consultants. This constitutes a distinctive advantage of WAHIT which works to build the capacity of local partners to be autonomous in terms of technical assistance on IT.

Does the introduction of WAHIT affect these preferences?

Clearly, for most of the KIs in the study, the introduction of WAHIT is "a breath of fresh air" in supporting the HIS. Providing onsite training and capacity building while resolving issues seems to be a unique and much appreciated niche for WAHIT. According to most of the KIs, among the partners supporting the MOH in strengthening the HIS, WAHIT is one that best meets their specific needs, consisting of deploying solid technical consultants who are able to build their capacity while providing the requested technical assistance to solve their issues.

"WAHIT is a breath of fresh air for the health system because they are addressing a need that was left behind. In most technical units, you will see that existing technical staff needed support. As I said earlier and each time when we identify a need, we call for local/international consultants. The consultant arrives, does the work and leaves (...). But normally, when the consultant comes to help with your work, you have to be able to reproduce what you learned from him/her. But this was not the case with the previous consultants. WAHIT now has to play that role, which is to build the technical capacity to solve the technical problems that arise with the HIS. It must close out then and not to permanently stay." Togo KI

The availability of WAHIT's staffs and WAHIT's approach was also cited by KIs as a relevant factor. WAHIT's approach allows the HIS actors to correctly identify their difficulties, shortcomings, and their own technical assistance needs.

How do relevant stakeholders outside MOHs perceive WAHIT and its model?

The findings from the midline study show that most of the partners outside the MOH in both countries are in favor of WAHIT's potential contribution. However, most of them only have a vague knowledge of WAHIT. This has not changed from the baseline study in Guinea and Sierra Leone. It will be important for WAHIT to develop trust with other partners and demonstrate its worthiness and missions. The KIs insisted that WAHIT must work harder to be better known through good communication on its missions and the quality of technical assistance in the different countries. Assigning experts per country or setting up focal points could strengthen the trust between WAHIT and local partners and speed up interventions. In addition, WAHIT must have a collaborative approach with the other partners involved in the HIS and integrate harmoniously into it. It must remain a technical support and not seek to establish itself as a new system. Establishing a regional database for the supported countries with standard indicators that will be provided by each country will be beneficial to everyone. However, some partners believe that since the HIS issue is quite broad and involves several partners and areas, especially the management of epidemics such as Ebola, it would be wise to open up the consortium further to make it a partnership of all health stakeholders. This can be done in each country and at the regional level by initiating and signing a Memorandum of Understanding (MOU) with the various partners intervening in the HIS.

What are WAHIT's operational strengths, weaknesses, and challenges?

Operational strengths, weaknesses, and challenges are organized into different categories: strengths, perceived weaknesses and challenges

Strengths:

WAHIT's strengths largely rely on the fact that it is seen by the stakeholders as a supra-national entity (under the WAHO umbrella) that brings highly technical assistance “cost-free” to different countries. WAHIT is seen as an original model, which brings TA while strongly working with local stakeholders/actors in the resolution of their own identified problems. WAHIT's model is seen by the KIs as TA model combined with capacity building and skills transfer. The flexibility and ease in obtaining TA, the availability of WAHIT's technical staffs make it a unique model according to the interviewees. The KIs also mentioned the expertise of WAHIT and their provision of very practical training. At the time of the evaluation, WAHIT had already been contacted, at least twice, by the MOHs in both countries (Burkina Faso and Togo) for technical assistance. The requests were essentially focused on supporting the MOH in both countries to identify various challenges and needs their HIS are facing but also provide on-site technical assistance and training. A workplan/timeframe for TA activities to be provided by WAHIT has even been developed in Burkina Faso.

“We organized a meeting with various stakeholders to identify our challenges and needs. Following the meeting, we requested technical assistance from WAHIT. Their technical team came to Ouagadougou and together we identified what WAHIT could do and what would need additional support (that WAHIT could not do). Then we developed a workplan with clear timeframe, which we are implementing now. For the meantime, under WAHIT, I don't think there is any support in terms of equipment and infrastructure; it is mainly in terms of expertise and training – that's all.” Burkina Faso KI.

WAHIT has been training stakeholders in Burkina Faso in “systems administration” and software installation, server configuration and installation, data backup system, development of specific queries and applications in the context of rapid SMS, database interoperability and IT security. Similarly, the DHIS2 technical team of Burkina Faso received capacity building for API implementation. Therefore, one of the key successes of WAHIT is the variety and specificity of its technical assistance. In Burkina Faso, clearly, WAHIT is seen as a unique partner, capable of providing such high and

wide range of IT technical assistance while building the capacity of the beneficiaries. Many KIs in Burkina Faso were very appreciative of WAHIT's approach to provide solution to IT issues while building the capacity of the stakeholders.

Another specificity of WAHIT that was mentioned by the KIs is the flexibility in requesting technical assistance. The system developed and implemented in Burkina Faso seems to be very well mastered and appreciated by the HIS officials. According to the KIs, all requests are developed and submitted online (forms are available online) by the HIS staffs. The MOH approves and sends/submits them to WAHO and thereafter WAHIT reaches out to the requestors.

"It is worth saying there is lot of flexibility with WAHIT. We recently submitted a simple request to WAHO, with the Minister's signature. (...) and WAHIT's support was immediately aligned. In September 2018 for example, we will get the support for the operationalization of DHIS2 and some of our systems".

"I forgot to say that, what makes WAHIT the best is, in addition to provide with the solution, they also teach you how to solve your future problems. WAHIT shows us how to achieve results. Unlike others who come to give you a solution and do everything for you to go back to them in the future. That's really the advantage of WAHIT" Burkina Faso KI.

Weaknesses/Challenges and Opportunities for improvements:

No challenges were mentioned for the technical achievement of WAHIT. According to the KIs, there is no administrative burden and they are able to contact WAHIT directly online. Instead, they shared some suggestions that would make WAHIT more successful. These proposed suggestions are presented below:

- WAHIT should look into developing and harmonizing the Health Information System in all ECOWAS countries;
- WAHIT should work on digitizing the systems;
- WAHIT should ensure that the countries can host their own databases;
- WAHIT should integrate the HIS "local coordination mechanisms" but also the partners' consultation framework established in countries to support the HIS;
- WAHIT should provide more certified trainings and conduct post-training assessments. WAHIT should provide guides and tutorials to be used after trainings are conducted.
- WAHIT should increase the number of experts while taking into account their country of origin and spoken languages, which should be a reflection of ECOWAS countries. The establishment of focal points in the countries could improve the availability of the team and the timeliness of their interventions.
- WAHIT should review the duration of their interventions in the countries and allocate sufficient time for adequate skills transfer or problem resolution.

"As already said, time is a problem. I would say this training was really very short... it should have been extended over at least a week. One training course can even last two weeks. Now, they don't go in depth. They came just to do some configuration. So, we were just following them. They had time constraints, so we had to finish quickly. At the last moment, it was necessary to proceed faster to finish in time". Togo KI

- WAHIT should build capacity in IT security, maintenance, connectivity, and infrastructure and equipment.
"Today we have many difficulties with server maintenance. There is no expertise at the national level, well, I mean at the Ministry level (...) Especially everything that has to do with server, everything that has to do with security, everything that has to do with hosting; it is really a problem. Except that, in terms of data exploitation, there is no problem. We have specialists, we have statisticians; we have really experienced data managers. The problem is really the security, hosting and connectivity aspects." Burkina Faso KI

- WAHIT should make itself better known and market itself through meetings. WAHIT is not well known among all HIS stakeholders, especially other technical partners involved in the HIS strengthening. These HIS technical partners have set up a consultation framework in Burkina Faso but WAHIT is not yet involved.

How relevant is WAHO's oversight of WAHIT to the level of awareness and demand?

WAHIT's affiliation to WAHO, according to all respondents (15/16 in Burkina Faso and 16/16 in Togo) represents a huge opportunity for sustainability of the interventions. WAHO has already established collaborative relationships with all the countries and partners in the region that may be very beneficial to WAHIT. WAHO and WAHIT are empowering the MOH in the countries. WAHIT is even more efficient because WAHO has its inter-country connections and can represent, to some extent a pool of inter-country resources, which is an advantage for smoothly building the capacity of the national staffs.

"This is an excellent decision as it is carried by an organization that has the legitimacy and recognition of the Countries and Governments. With WAHO's senior decision-makers and health Ministers, they have a general assembly where they make decisions; meaning that if WAHO makes decisions, it is the countries that make decisions." Togo KI

According to the KIs, WAHIT's affiliation to WAHO represents a solid opportunity to improve the health information system across ECOWAS countries and build a solid foundation and platform for addressing epidemics in the sub-region. The KIs see this affiliation as an opportunity for future integration of countries' information systems which will optimize the use of inputs and save resources from duplication. This is an opportunity to build a global response in case of an epidemic and provide relevant information for decision-making at the regional level.

Is the partnership set up for implementing WAHIT effective? (WAHO, Palladium, and USAID)

According to KIs, the advantage of this partnership is first and foremost, the mutual efforts at all levels: the sharing of knowledge, resources and experiences. The partners are all supporting the HIS in terms of design and provision of IT equipment. The partners will each bring on board their own experiences and benefit from each other's experiences. WAHO's good field knowledge, USAID's extensive presence and Palladium's technical expertise make this consortium a solid entity. It makes it possible to bring together a number of points for improvement, resource mobilization and technical support. Each partner brings its own specificity that allows the consortium to be viable.

"It allows the resources to be shared, because if we intervene separately, it would either be a sprinkling or we would intervene twice (2) for the same problem. Whereas by creating a partnership like this, it allows to pool resources and to be much more efficient with the highest quality of services. If the actors are truly engaged for the long run, this could eventually lead to sustainability. (.....) And since it is through WAHO, which is a sub-regional organization composed of different governments, it is thought that, if at some point this support were to decline, the various governments could eventually bear the costs inherent in that." Burkina Faso KI

Some KIs believe this is an opportunity that WAHO must seize to consolidate its position and take over to become more autonomous. Information is strategic and forms the basis of everything. However, some participants believe that since the HIS issue is quite broad and involves several partners and areas, especially the management of epidemics such as Ebola, it would be wise to open up the consortium further to make it a partnership with all stakeholders intervening in the Health sector.

Conclusion and Recommendations

Conclusion

The Health Information System of Burkina Faso and Togo are all designed around DHIS2 with different experiences; Burkina Faso introduced DHIS2 in 2013 and Togo more recently in 2017. However, the challenges in both countries in terms of digital HIS are similar in several respects and can be summarized as follows:

- Data quality (completeness, promptness, consistency, etc.);
- Multiplicity of data sources;
- Insufficient human resources in quantity and in quality;
- Inadequate data analysis/use of data;
- Insufficient funding for HIS;
- Insufficient infrastructure and equipment (computers, servers, software, maintenance problems, data security, electricity, internet connection, etc.)

WAHIT is now well known in both countries with a high level of satisfaction. The first experiences of technical support were very well appreciated and the WAHIT model seems to convince partners who find it a viable option that they would be willing to not only use in the future but also recommend to other colleagues/countries outside West Africa. WAHIT's anchoring within WAHO is a major asset and a guarantee of success because it automatically benefits from WAHO's credit and audience. A few concerns about WAHIT's interventions are related to sustainability. It is not yet certain in both countries how WAHIT's successes could be maintained after the project ends.

Specific Recommendations

- Use multiple avenues to inform different stakeholders of what WAHIT is, what it can do, and how international partners and countries can tap into the technical assistance the team may provide. This could include meetings that WAHO has already scheduled in the countries and/or joining local HIS taskforces;
- Engage more senior health officials in the management of data quality issues;
- Develop and standardize the Health Information System across ECOWAS countries. This would enable the implementation of health system metadata within the WAHO space and provide a global response to an outbreak by making available timely and relevant information to the national and regional decision-makers;
- Create a platform for promoting and sharing good practices/experiences among ECOWAS countries;
- Promote the interoperability of the different existing systems through the development of specific applications which capitalize/computerize all data in a single database.
- Provide more consistent trainings with tutorial guides and give recognition through awarding official certificates.
- Review the duration of field interventions to allow sufficient time for adequate skills transfer and/or problems resolution;
- Reinforce capacity building in IT security, maintenance, internet connectivity, and data hosting in the countries;
- Broaden the range of activities beyond TA and have a holistic view of the health information system ranging from data collection, administration and management to integrating aspects of infrastructure and equipment (computers, servers)
- Once the technical area of support is identified, one way to organize WAHIT TA is to start with a short-term TA visit, followed by intermittent visits as needed. Additionally, providing remote assistance to ensure smooth implementation of recommendations and know-how transfer.
- Create a regional "pool" of trainers and TA which WAHO would tap on whenever needs are;
- Appoint 'local-in-country focal points' for WAHO and WAHIT;
- Regularly (at least once a year) organize regional meeting for of IT and HIS partners to discuss about issues, challenges and lessons learned;
- WAHIT to join and be member of all the existing partnerships and "tasks forces" at the country and regional levels.

BACKGROUND

The Health Information System (HIS) is a foundational piece of health infrastructure. A strong HIS provides reliable data to policy makers (governments, development partners, service providers, and communities) for targeting health interventions, allocating resources, and effectively responding to disease outbreaks. A properly functioning HIS ensures that vital information gets into the right hands when needed, enabling policy makers, health managers, and individual health care providers to make informed choices about everything from patient care to national budgets. However, in West Africa, HIS are weak and face several challenges, including poor governance and accountability. Furthermore, the HIS are under-utilized and incomplete with regard to information on health service availability, infection control options, case notification, geographic spread, and relevant animal health data.

The 2014–2015 Ebola outbreak in West Africa exposed severe weaknesses in regional HIS. The outbreak went unnoticed during its initial weeks until the first serious symptomatology and deaths appeared, and it eventually infected nearly 28,000 individuals and claimed 11,310 lives.^{3,4} Local responders lacked critical information such as case notification, transmission rates, geographic spread, and health service availability needed to monitor and manage the situation comprehensively and in real time. If this information had been readily available, large-scale human and economic losses could have been avoided. Furthermore, as Ebola erupted across West Africa, a weak communications infrastructure and the lack of a two-way real-time disease data collection and analysis system hampered the ability of health care workers to respond to the crisis.

Against this backdrop, national governments, regional institutions, and international organizations aim to set up a strong HIS across the West Africa region. During the 2015 Annual Meeting of National HIS Managers in Accra hosted by the West African Health Organization (WAHO) and the United States Agency for International Development (USAID), all 15 members of the Economic Community of West African States (ECOWAS) recognized a lack of technical capacity to maintain and adapt critical digital health platforms as a contributing factor for challenges faced during the national response to Ebola in West Africa. They also affirmed that reliance on external support jeopardizes the successful implementation of digital tools for health and can be a critical impediment to further progress in public health systems development. Therefore, USAID, in partnership with other key players, opted to support WAHO in building a West Africa Health Informatics Team (WAHIT) that will serve to fill this gap by acting as a regional resource to provide technical support to national Ministries of Health (MOH) for HIS improvements.

In 2017 USAID/WA tasked the West Africa Evidence for Development activity (E4D) to conduct a Prospective Operations Research (POR) and provide research-based evidence on trends in awareness of, demand for, and satisfaction with WAHIT and its services in three countries (Guinea, Sierra Leone, and Ghana).⁵ The final report was completed by E4D and approved by USAID in February 2018 and uploaded on the Development Experience Clearinghouse (DEC) on March 2018.

In 2018, USAID/WA tasked E4D again to conduct a midline study in Togo and Burkina Faso. The target audiences for the research are USAID including the Africa Bureau, the Global Development Lab Team supporting Ebola activities, and the West Africa Regional Mission; the West African Health Organization (WAHO); the Ministries of Health (MOH) in the three countries; Palladium (HP+), their donors and local partners in health and in other sectors using the health information system (HIS).

³ Cenciarelli, O., Pietropaoli S., Carestia M., D'Amico F., Sassolini A., Di Giovanni D., Rea S., Gabbarini V., Tamburrini A., Palombi L., Belleci C., and Gaudio P. (2015). Ebola Virus Disease 2013–2014 Outbreak in West Africa: An Analysis of the Epidemic Spread and Response. *International Journal of Microbiology*, Volume 2015 (2015), Article ID 769121, 12 pages.

⁴ World Health Organization. (2016). Ebola Data and Statistics. <http://apps.who.int/gho/data/node.ebola-sitrep.quick-downloads?lang=en>.

⁵ Liberia was expected to be included in this assignment, but it was subsequently dropped at the request of the USAID Global Development Lab.

STUDY GOALS AND OBJECTIVES

The main goal of E4D’s midline Prospective Operations Research (POR) is to assess *trends* in awareness of, demand for, and satisfaction with WAHIT and its services in two non-Ebola-affected countries: Burkina Faso and Togo.

The POR has the following **primary objectives**:

1. To identify *factors* influencing the Ministry of Health’s decisions to engage WAHIT technical support (versus the support of alternative service providers)
2. To assess satisfaction with WAHIT services, and to generate data to inform program adaptation
3. To identify *challenges* and *barriers* faced by health stakeholders (health workers and MOH officials) in adopting and managing the WAHIT model

Research Questions

The POR aims to answer the following research questions:

1. How aware of WAHIT are relevant MOH personnel? How does awareness change over the project life cycle?
2. What level of demand is there for WAHIT services? Is demand sufficient to justify the model’s continuation? How will demand change over time as WAHIT establishes itself?⁶
3. Whom do MOH officials trust and prefer to address HIS technical challenges to? Does the introduction of WAHIT affect these preferences?
4. How do relevant stakeholders outside MOHs perceive WAHIT and this model?
5. How is/isn’t WAHIT meeting the needs of MOH officials? What can WAHIT do to better identify and meet needs?⁷
6. What are WAHIT’s operational strengths, weaknesses, and challenges? What can be done to improve operational effectiveness?⁸
7. How relevant to the level of awareness and demand is WAHO’s oversight of WAHIT?
8. Is the partnership set up for implementing WAHIT effective (WAHO, Palladium, and USAID)?

Description of WAHIT

WAHIT is a partnership of USAID with other key players to support WAHO that will serve as a regional resource to provide technical support for HIS improvements. The overall goal of WAHIT is to provide HIS technical leadership and support to Ministries of Health (MOH) within the Economic Community of West African States (ECOWAS), with an initial focus on the Ebola-affected countries of Guinea, Liberia, and Sierra Leone. The specific objectives of WAHIT are as follows:

1. Set up a regional team of experts (software developers, business analyst, and team lead) to make immediate technical improvements in the national and regional digital HIS that will help strengthen public health systems. These investments—from linking separate systems to automating reporting to building dashboards—can help improve health outcomes for some of Africa’s most vulnerable populations as the region recovers from the most devastating Ebola outbreak in history.
2. Build local software developer capacity to support long-term sustainability of HIS investments in the region. During the first year of the team’s deployment, USAID and partners can test innovative models for providing sustainable software development support to the public sector, with the potential to spark transformative technology-driven approaches for development in some of the world’s most resource-constrained countries.

⁶ This question is not addressed by the baseline.

⁷ *Ibid.*

⁸ The baseline addressed only the first part of the question.

- Support a strategic recommendation from the 2012 ECOWAS Health Policy and Strategic Plan to establish a regional HIS Center of Excellence (CoE).

To achieve these objectives, WAHIT was designed to assist the MOH in the host countries with fixing, adapting, and maintaining their HIS. Illustrative activities include the following:

- Integrating a separate District Health Information Software (DHIS2) component for malaria reporting into the national DHIS2 platform
- Creating a Reproductive, Maternal, Newborn, and Child Health (RMNCH) dashboard based on existing indicators
- Integrating the newly approved Tuberculosis Form into the national DHIS2 platform
- Automating the reporting of the National Health Management Information System (NHMIS) data into WAHO's DHIS2 platform
- Continuing training of District Monitoring and Evaluation (M&E) officers for data entry and reporting quality

The activity started in September 2016 (with the pilot phase ending in December 2017), with the flexibility to continue into 2018 and 2019. WAHO is implementing the WAHIT project with the support of USAID and Palladium.

Within the **first year of operation**, WAHIT is tasked with the following:

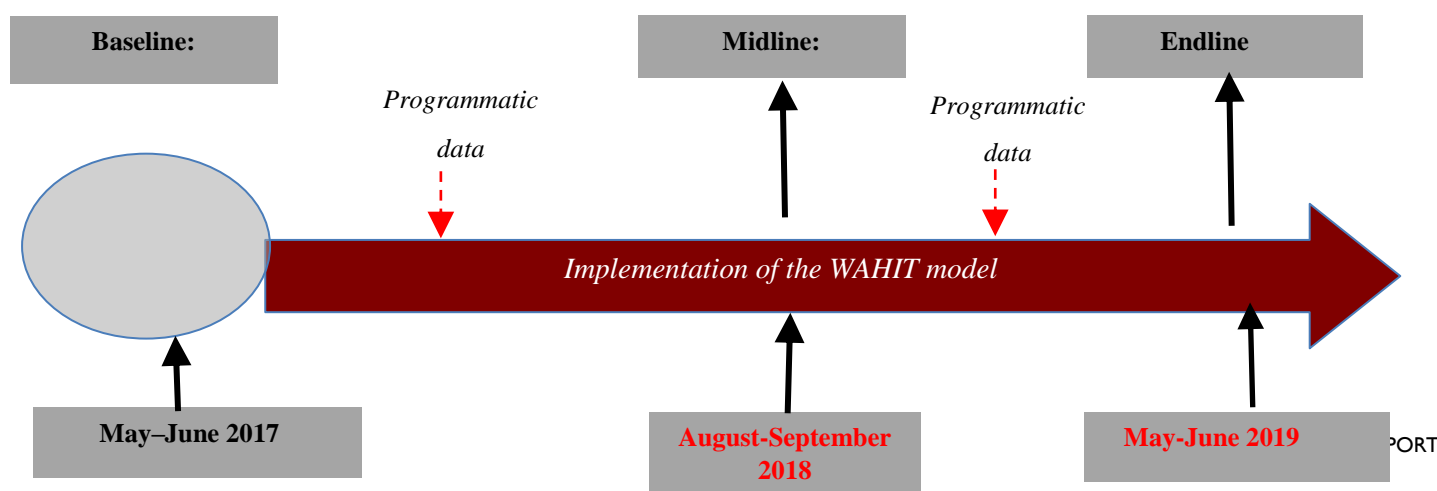
- Establishing standard operating procedures (SOP) for providing support to MOHs
- Providing technical support to improve national HIS platforms based on criteria agreed upon by WAHO and USAID
- Documenting and establishing best practices for regional digital health support to MOHs; technical assistance provided by this team will also seek to accelerate HIS interoperability in the region
- Conducting a viability assessment to inform the business case for whether a fuller and long-term regional WAHIT should be launched with a sustainable model for recruitment and training, and whether/ how to link to the proposed WAHO Centre of Excellence (if so, the assessment will also identify significant factors influencing program success and recommendations for implementation and sustainability)

METHODOLOGY

Study Design

The prospective operations research study uses a quasi-experimental prospective design. It is being implemented in two Ebola-affected (*intervention*) countries (Guinea and Sierra Leone) and three Ebola-unaffected (*nonintervention*) countries (Ghana, Togo and Burkina Faso). The process includes three measurements. Figure 1 presents the study timeline and it serves to place the midline in context.

Figure 1: Proposed Timeline of the WAHIT Intervention and Prospective Operations Research



The E4D team conducted the baseline before the commencement of WAHIT services implementation (May 2017), with the understanding that scoping visits had already been completed in Guinea and Sierra Leone.⁹ The baseline survey assessed factors, perceptions, and intentions to use the WAHIT model. The midline survey was conducted in August-September 2018 to assess any changes that had occurred since the baseline survey.

Sampling Strategy

This study used data from a purposive sample of 32 key informants: Togo (n=16) and Burkina Faso (n=16). The initial list of study participants, proposed by USAID with WAHO and Palladium's concurrence, was reviewed to integrate more key players of HIS in Togo and Burkina Faso. Modifications to the initial list occurred in response to the implementation reality on the ground, and were discussed with and approved by USAID/WA. USAID/West Africa introduced the study and researchers to study participants. The E4D research team followed up with emails and phone calls to secure interviews. Most of the key informants (KIs) responded immediately and expressed their availability and willingness to participate to the survey, which was a good indication of their collaboration with WAHIT. The sample of KIs included actors at the national level, notably, managers and specialists of HIS within the MOH and technical and financial partners involved in the reinforcement of the HIS. The list of KIs at the midline may be found in Annex 1; it is broken down by location, institutional affiliation and role.

Data Collection

Data collection occurred during the months of August and September 2018 in Burkina Faso and Togo. Two Seniors Health Evaluation Specialists conducted the interviews. The data collection occurred when WAHIT TA was already in the two countries. The data were collected through face-to-face interviews.

Data Collection Instruments

During the baseline, E4D had constructed a matrix reflecting (i) the research questions; (ii) the corresponding field questions to be included in the data collection tools; and (iii) the study participants who would provide information. There are four categories of study participants: (1) MOH staff, (2) implementing partner (IP) staff and international organizations (UNICEF and WHO), (3) WAHO and Palladium, and (4) USAID. The matrix also indicated, which questions need to be used at the different measuring points (baseline, midline, and endline). This separation is important because many of the questions concerning perceptions about the WAHIT technical assistance provided pertain only to the midline and endline. In addition, some of the KIs are not technical assistance recipients and therefore should not be asked questions pertaining to the quality of assistance received. Before starting the data collection for the midline, E4D revised the data collection tools (used during the baseline) to consider ongoing activities and to incorporate questions from the WAHIT Client Satisfaction Survey. The questionnaires were then piloted in Togo and amended before actual data collection began. The numbering of questions in the different versions of the instruments remain the same for easy question identification when discussing instruments. The matrix constructed appears in Annex 2 and the instruments used in the study may be found in Annex 3.



Interview at HIS office in Togo

⁹ The final report will emphasize that as a result, Guinea and Sierra Leone are expected to have a greater awareness of WAHIT at baseline.

Data Analysis

Interviews were conducted in French, taped, transcribed and analyzed using a thematic grid developed by randomly selecting three interviews from each country and identifying initial themes. The analysis grid was expanded as additional topics emerged. Data were entered in NVivo12 and word clouds were created for two topics: the WAHIT model and WAHO's oversight of WAHIT.

The transcription of Key Informant Interviews (KIIs) began immediately after the interviews. To complete the data analysis the following actions were performed:

- Developing the grid by doing an initial identification of themes in three randomly selected interviews from each country
- Expanding the topics in the analysis grid as additional topics emerged
- Using verbatim remarks and having sentences as the unit of analysis
- Grouping results by key areas of interest
- Identifying different positions in relation to each important topic
- Summarizing each position and assessing its strength or degree of importance

Ethical Considerations

Measures were taken to protect the rights of human subjects who participated in the study and to adhere to the ethical principles of respect, beneficence, and justice as defined by The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research.¹⁰ E4D submitted the study protocol to USAID/WA for approval. The interview guide included a consent sentence recognizing the participant's right to refuse the interview before and/or during the research. All participants agreed to have their interview recorded.

¹⁰ National Institutes for Health. (1979) *Regulations and Ethical Guidelines: The Belmont Report Ethical Principles and Guidelines for the Protection of Human Subjects of Research*, Retrieved December 7, 2012, from: The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research: <http://www.biola.edu/offices/clear/media/downloads/BelmontReport2.pdf>.

MAJOR FINDINGS

The major findings of this research vary by country depending on the level of the development of their HIS and the various historical challenges that these health systems have faced.

Profile of Study Participants

The KIs were mainly Ministry of Health officials at several levels of decision-making. There were specialists in data management and HIS managers. Added to this were the focal points or those responsible for the technical and financial partners involved in the HIS. All KIs had a university education and were predominantly male. Out of the 32 KIs that were interviewed, only four were women. In Burkina Faso, 69% (11/16) of KIs reported having received specific training in HIS compared to 75% (12/16) in Togo. These trainings included the use of DHIS2, data management, data processing, development of databases as well as specific computer trainings. WAHIT and MEASURE Evaluation were mentioned by the respondents as the main providers of those trainings. Half of the KIs reported having received specific training in epidemic surveillance and reporting of diseases in Burkina Faso and Togo. These trainings were mostly on integrated disease surveillance and response provided at the health facilities. However, some participants reported having benefited from trainings organized by CDC on epidemiological surveillance and surveillance-oriented information system. The participants were Medical Doctors (13); Statisticians/Demographers (7); Data base/Computer Specialists (5) Epidemiologists (2) Pharmacists (2); Medical Assistants (2) and Sociologist (1). The participants either had a Master's Degree (28 participants) or a PhD (4 participants). In Burkina Faso, 69% (11/16) of KIs reported having received specific trainings in HIS. In Togo the percentage of KIs reporting having received any training on HIS was 75 (12/16). In both countries, the HIS trainings received by KIs were either as part of diploma courses (Public Health professionals and Statisticians/Demographers) or onsite/on-the-job trainings which were mostly workshops organized at the health districts by the MOH. In Togo, several KIs reported that they had completed their trainings in the use of the DHIS2. Topics covered by trainings included: routine health data management organized by MEASURE Evaluation; data management and data analysis; development of databases as well as the use of various data processing software.

The KIs hold different positions/roles depending on the country and organizational structure. Most of the KIs are involved in the conception and elaboration of health policies and strategies, the implementation of health policies, monitoring of health services and administration and management of health databases. All the KIs are directly involved in the HIS strengthening and management. For the data analysis of the midline study the KIs were grouped into 4 categories: (1) Operational support; (2) Development of standards (data collection tools, collection procedures, introduction of new data collection tools; (3) Production of data (routine reports, dashboards, epidemiological bulletins, development of the national health accounts, etc.); (4) Coordination and management (coordination of specific surveys, promotion of Information and Communication Technologies (ICT), etc. In Burkina Faso, 77% of the KIs reported that they regularly use both the routine and surveillance systems for decision-making; 23% reported using the routine data compiled into the DHIS2. In Togo, 33% reported using both the routine health information system and the data generated from surveillance; 53% reported using only (or are only interested in) routine health information system; 13% reported to be only interested and use data from surveillance. In both countries, the KIs mentioned many other data sources, mainly data from large-scale studies/surveys: national health accounts, DHS, MICS surveys, various malaria surveys, program evaluations, general population census, etc.

The Health Information System

The routine HIS in Burkina Faso is digitized and implemented nationwide. DHIS2, renamed “ENDOS” (Health Information Warehouse) has been in use since 2013. Routine data entry is carried out at the Health District level. At the health facility level, data is still collected, computed and completed on paper before submission to the health districts. Most of the surveillance systems are still “partially digitized”. The process for digitizing surveillance data is underway in 16 of the 70 districts in the country. A progressive scale up is being planned. Figure 2 below presents the health information system pyramid in Burkina Faso.

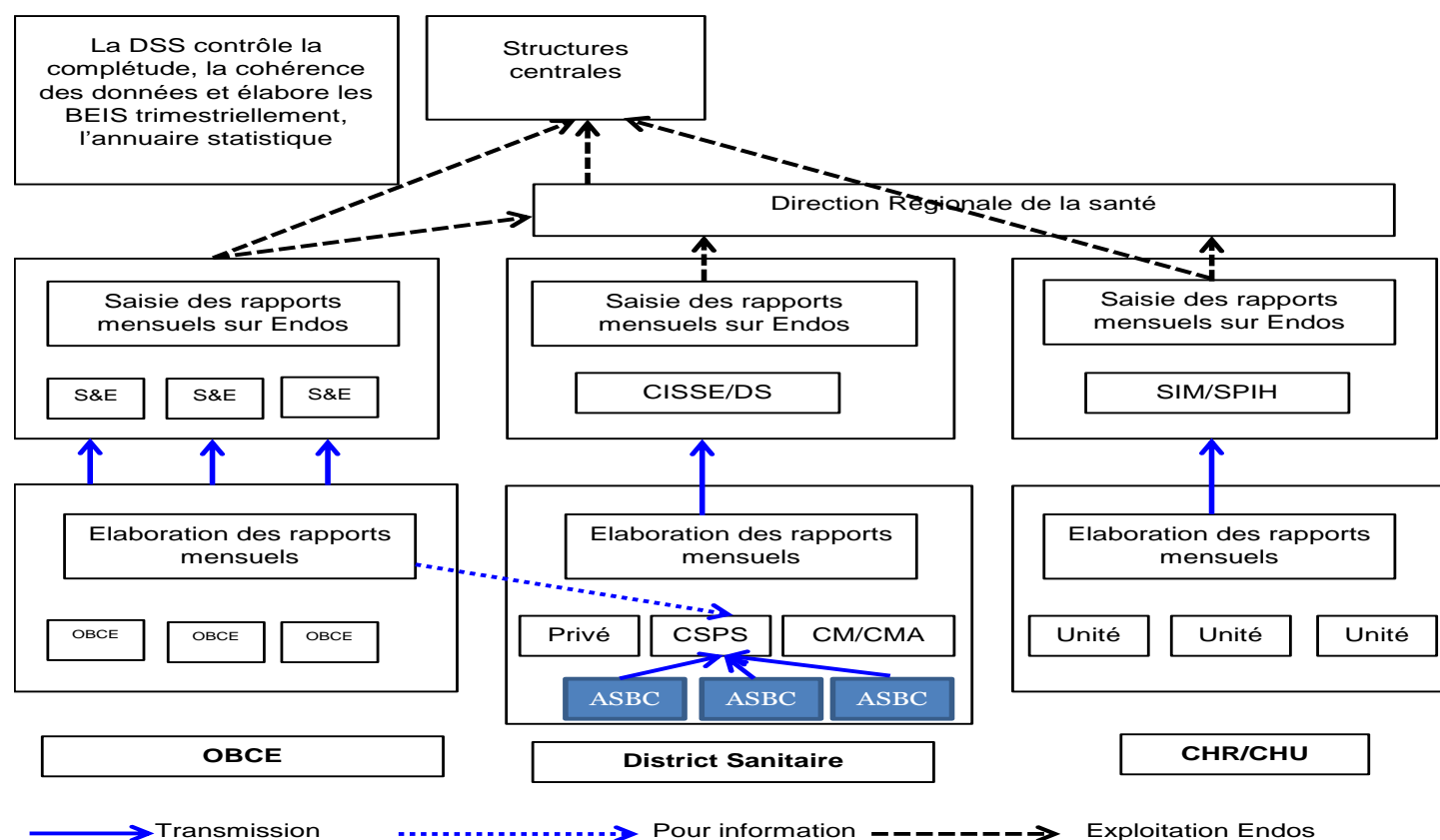


Figure 2: Health Information System in Burkina Faso

The routine HIS partially meets the needs of the KIs in Burkina Faso even though they all mentioned the lack of some key information to inform their decision-making process. According to the KIs in Burkina Faso the HIS is still lacking relevant data related to the population both at the district and community levels making it difficult to evaluate the effectiveness of some health interventions.

"It must be said that at this point the routine HIS is not complete and additional health information is needed. And, when we want to use other sources, we realize that they are not well structured and sometimes (...) Therefore, it is crucial to initiate other types of data collection. Because if we really want use the data for decision making and be efficient, we should not simply limit ourselves to collecting the routine data. In principle, all the health information should be collected

comprehensively (...) In addition, other sectors generate information (...) it would be interesting to have all these sources of data connected; because triangulating the information will enable us to make better decisions.” Burkina Faso KI.

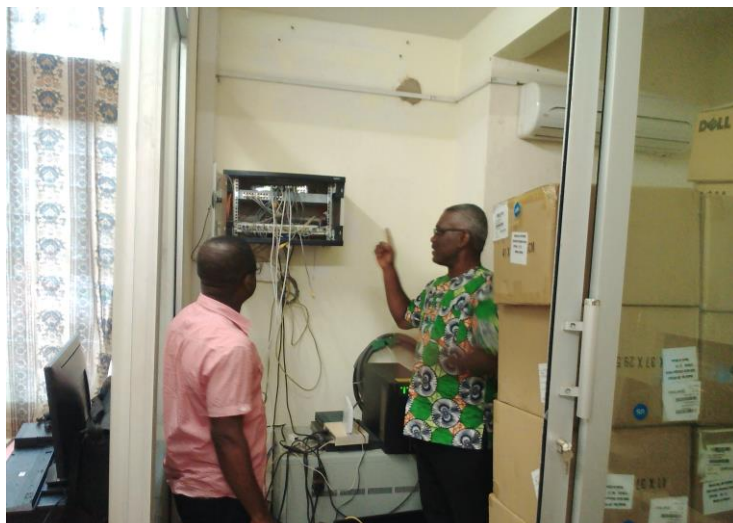
In Togo the HIS is now digitized and running on DHIS2, which is in its first years of implementation after the pilot phase. The DHIS2 in Togo seems to integrate both routine and surveillance data.

"For years we were using paper-based questionnaires to conduct Evaluations in Togo. But now most of the time, we use tablets and phones for data collection." Togo KI.

"This year, we developed and installed an integrated database, DHIS2. Starting from the health facility, the data are collected using tablets and, at the central, we have immediate access to the data. We conduct data analysis and provide feedback." Togo KI.

"In Togo, with DHIS2 we have both routine and surveillance data, it's a whole set that we have. We need information we know where to look for it." Togo KI.

"DHIS2 is an integrated robust and secure system. With DHIS2 we have access to the data from all health facilities as it is a web system. The system is designed in such a way that each health facility easily enters its routine data.» Togo KI.



HIS Manager describing how the data is collected, uploaded and transferred to the central level of the MOH in Togo

Also, unlike Burkina Faso, where data entry into the DHIS2 is centralized at the district level, in Togo the data entry is carried out at the health facilities, which are equipped for this purpose.

"Now with the DHIS2 I think it's much better. All the health facilities enter their data, simultaneously, on a monthly basis, using their tablets. We can check on the data at every level of health system". Togo KI

In Togo, the KIs globally expressed their satisfaction with the routine data system even though they also mentioned some issues: completeness, readiness and often the multiplicity of sources.

"Yes, the data that we generally need, I'll say up to 90%, we have these data, but they are not always of the best quality and they do not arrive in time." Togo KI

Similar to Guinea and Sierra Leone, the KIs in Togo and Burkina Faso mentioned that they also use data from specific surveys and evaluations to complete the information generated by the routine HIS.

Common challenges: Prioritized HIS challenges and challenges affecting the conversion to a Digital HIS

The HIS in both countries face several similar challenges ranging from data collection to data quality, data analysis and use, and data dissemination. These challenges can be grouped as follows:

Data quality

The quality of the data collected and generated through the routine HIS seems to be the most common issue for the KIs in Togo and Burkina Faso.

"We generally have a problem with data quality, data promptness and completeness. The routine reports are not always exhaustive. Sometime, not all variables or information are filled in. Even the validity and veracity of the data is a challenge. In Togo the governance and accountability of the HIS staffs should be improved." Togo KI

The questions about the quality of the data cover several topics: how the data is collected and completeness of the collected data. The HIS is not always comprehensive and exhaustive because it mainly focuses on the public health sector and therefore does not fully integrate the private or community and traditional health systems. In both countries, the private sector is not part of the national HIS and despite many efforts, the community-based health workers (CBWs) are not always integrated and/or most of the time they face frequent disruption of data collection forms/tools.

The quality of data generated by the HIS is also sometimes impacted by the existence of multiple data entry points between the registers, paper-based entry points, tablets and the DHIS2 entry at the district level, especially in Burkina Faso. Each level of data entry could be a potential source of error. This problem of multiple entry points is minimized in Togo with the provision of 700 tablets in the public health facilities for data entry. Although some public health facilities are yet to receive their tablets, most of them are already covered by the program. Unfortunately, that's not the case with the private health facilities which were not considered by the decision makers. However, KIs believe that digitizing the provider's registries would significantly reduce errors in data entry. Fortunately, in the two countries, many tools and approaches have been implemented to improve data quality. These include the WHO's Data Quality Improvement Plan and Data Quality Control Guide, the Monthly Activity Report (MAR) in addition to the quality control built into the DHIS2 itself. Some KIs mentioned that even if the tools are available, they are rarely used by the HIS professionals. Reasons for not properly implementing these quality control procedures include: the lack of involvement of key managers; lack of continuous training/supervision; and the high turnover of staffs.



Stock of Tablets at the MOH in Togo

Multiplicity of data collection points

There is a lot of data produced in Togo and Burkina Faso that are not used. To date, there are still many parallel data collection systems in the countries and the KIs highly recommend that all the data collected be made available and accessible to stakeholders on a single platform. Hence the necessity of robust interoperability procedures and systems, integrating all the existing parallel and different data sources. This can only be achieved by using relevant and harmonized indicators by clarifying their definitions, method of calculation and data source. This will require collaboration between all actors/stakeholders supporting HIS. During the study, it was noticed that many partners (some international) are still developing and implementing parallel data collection systems directly resulting in duplication of the information generally collected by the same individual (the health provider). This leads to an increased workload for health facility staffs and negatively impacts not only the quality of the data but also the quality of the health services provided.

"When we ask the staffs to collect too many indicators, they become overloaded. Then they cannot do a good work; they just try to complete the forms sometimes with inaccurate data. To have true data, data of quality, we must minimize their data collection efforts". Togo KI

Data analysis/data use

One of the key findings of the study is that the data generated by the HIS in both countries is not always used for decision making. Very little data analysis is completed at the national level to produce mandatory documents such as the periodic health statistics bulletins, dashboards, annual reports, etc. The KIs and especially the international partners reported lack of accountability as a major issue.

"Recently, when we were completing the national health accounts, the Minister asked us a simple question: what kind of decisions do we make using these national health accounts? The reports are there, the data is there but we do not use them for making decisions." Togo KI

Lack of qualified personnel

Lack of qualified personnel at both the central and operational levels, high turnover of health professionals in charge of HIS may explain the poor use of data and lack of data analysis. Some KIs believe that training health personnel for data management is not enough and that database managers and administrators are also needed.

"In our health facilities we collect data more for reporting than for our internal need/use. However, the main reason for collecting data is for use and not just for reporting (...) The universal approach of training health workers in data collection is not effective, it solves the problem of data collection and fast processing monthly reports but does not address the problem of data analysis and data use." Togo KI.

Funding the HIS

The HIS, according to the KIs, mainly in Togo is ill-funded from the national budget, which often compromises activities such as data quality assessment and validation. This situation was not reported directly in Burkina Faso. In both countries, however, it should be noted that the HIS is mostly supported by international partners.

"Funding is a challenge! When you consider the workplan and budget for our MCH unit for example, you will never see a budget line for data collection, data validation of data dissemination. This is really a challenge for us". KI Togo

Insufficient infrastructure in HIS

The HIS in both countries suffers significant lack of infrastructure (computers, equipment, internet connection, sources of energy, software, and security). Only updated equipment with internet connection and a reliable source of energy would help address this challenge. The lack of internet coverage and its instability (where Internet is available) dramatically influences the HIS promptness. Even when minimum equipment is available, there are still issues with maintenance and/or updating software.

"There is insufficient equipment and technicians for the maintenance of the existing equipment. Having the equipment is one thing but being skilled to ensure the maintenance of that equipment is another thing. The last time we conducted an inventory of our equipment, we realized that nearly 83% of the smartphones procured for data collection at the community level were not anymore functional." Togo KI.

For many KIs, specifically from Burkina Faso, the physical location of the DHIS2 server in Oslo, Norway, was a concern. The following quotation from one KI neatly summarizes the main challenges reported by the various KIs:

"Well, the first challenge of the HIS is the data processing and management; the HIS produces data of poor quality; this is the first element. I can say this based on two Data Quality Assessments (DQA) that I personally conducted in 2014 and 2017. Even if some improvements are noticeable, the data produced by the HIS is still of poor quality(...)

Secondly, there is a problem with the data transmission. There is a conflicting agenda between timeliness of the data reporting and the data completeness and promptness. Indeed, the data arriving at the district level is almost always timely but almost always incomplete. The data arrive on time but incomplete. This is caused by the fact that the districts

Managers are more focused on the data reporting: is the report submitted on time? By the time they ask themselves whether the report is correct or not; they have already checked it as submitted and entered. (...)

Another element is the personnel in charge of the HIS. The turnover of staffs is very high at all levels of the HIS. While very few trainings on HIS are supported by partners and the MOH, the frequent turnover of personnel presents a challenge for HIS. From the central MOH level down to peripheral level everyone moves, there is no memory and no memory no system. We must computerize the whole HIS (...). I am convinced that with the systematic computerized HIS, errors will be minimized while the memory is built. We should introduce, at least, tablets at the Health Facility level.”
Burkina Faso KI

The HIS needs continuous reinforcement/improvements and must be dynamic to adapt to different situations. This reinforcement should cover the infrastructure, equipment and maintenance, human resources and internet connection. The various partners supporting HIS in Burkina Faso form a “Consultation group” which presents an opportunity for a long-term solution.

Government Plans to Resolve HIS Challenges

The MOH in both countries are aware of the different challenges that the HIS is facing and have developed plans to address those challenges in partnership with different stakeholders. In Burkina Faso, the National Health Policy (NSP) selected the HIS as one of the eight (8) technical strategic axes of the National Health Development Plan (PNDS in French) for the period 2011-2020. It integrates a strategic plan for the HIS which are operationalized in annual plans at all levels. Many strategic and operational plans have been developed to improve and strengthen the data quality of epidemiological surveillance. One of them is the eHealth sectorial Cyber strategy 2016 – 2020 where one specific objective is to increase the coverage of at least 95% of peripheral health centers with appropriate ICT solutions for the transmission of health information. The Government in Burkina Faso is using its internal resources to improve the internet connectivity in the country. In Burkina Faso there is Ministry in charge of digital economy development with a specific project named G-Cloud.

“Well, the Ministry of Health is working with the Ministry of Digital Economy Development to face the challenges related to the technology and IT infrastructure. That particular Ministry is engaged in many activities including strengthening the national capacity to host mega data (...) They envision to having at least six (6) nodes and servers throughout the country to securely host data. There is also a Project named PAD-TIC project (ICT Development Support Project) which aims at strengthening the Internet connectivity and interconnection capacity throughout the Country.” Burkina Faso KI

Additionally, some partners such as the Global Fund and USAID are involved in improving the quality of data by training data managers and supporting internet connectivity with acquisition of 3G, connecting the health districts and hospitals in Burkina Faso. WHO also provides technical assistance for the development of data collection tools and guides to improve the quality of routine data as well as monthly reports.

Togo has also developed a health development plan with a specific component on strengthening the national health information system. The plan was developed and validated in 2017 and will go up until 2022. In addition to this plan, there is another computer master plan which will be implemented based on the availability of resources. To improve internet connectivity, the e-government has a system which allows more than a dozen sites to be interconnected by optical fiber with high speed internet. In addition, the Government in Togo is working to establish a “data center” which will enable the MOH to locally host the DHIS2 server while ensuring optimal conditions for continuous backup and security.

“Yes, in Togo we have a very good plan for reinforcing the HIS. Having a plan is one step forward. Ensuring the resources are mobilized the implement the plan is the key issue. I am sure this is not done yet.” Togo KI

In Togo the idea of involving the private sector and the civil society organizations to fund the HIS has been discussed.

"... How to encourage creativity among national private companies? For example, how to mobilize resources from non-Governmental stakeholders to support the HIS. I see "Espoir-Vie-Togo" and ATBEF, for example, who can support the MOH. So how to create some kind of national champions who are going to support the system. We can do something like that, create a kind of partnership to support the system." Togo KI

Awareness, Potential Contributions and Relevance of WAHIT

Awareness of WAHIT

In general, the awareness of WAHIT was high in Burkina Faso and Togo; more than half of the KIs had already either heard or had worked with at least one member of WAHIT. In addition to being informed about the existence of WAHIT, most of the respondents had been in direct contact with WAHIT. In Burkina Faso, 2/3 of the KIs either knew about or had worked with WAHIT. One KI said he heard about WAHIT from WAHO officials and other KIs were aware of WAHIT through collaborations with the technical team and/or had received technical trainings. Overall, most of the KIs in Burkina Faso have collaborated or coordinated with WAHIT and have had a very positive impression with recurrent expressions being "they support the health information system"; "They have strongly supported us, even for rapid transmission of data and reports in Burkina Faso".

"When WAHIT was launched as partner for strengthening the health information system, we were really informed, we even received the WAHIT team. We exchanged a lot and altogether we developed specific workplan for their support. The technical support has even begun since last year which in principle should continue." Burkina Faso KI.

"The WAHIT team, yes I know them. They came to visit us, introduced themselves, their areas of interventions, their operational mechanisms and they have even started to support us." Burkina Faso KI.

"Recently we were trained on ENDOS and WAHIT was one of the partners. I know they support the health information system. That's all I know but I have not had the chance to know more about the project. It is through WAHO that I knew their existence ". Burkina Faso KI

Awareness of WAHIT was less in Togo with only about half of the respondents (7/16) indicating that they had heard of WAHIT and/or had benefited from its support.

"No, the first time I heard about WAHIT was when I received the message from USAID/WA. So far, I do not have a very clear idea of what WAHIT is about." Togo KI.

Respondents in Togo who were aware of WAHIT could not clearly describe the details of the project. However, they confirmed having recently benefitted from a training and/or technical assistance from WAHIT.

"WAHIT's role? Well, I cannot say exactly!!! WAHIT recently requested that we go train some countries (Benin, Burkina Faso and Guinea) on how to improve the quality of data. We were also recently trained by WAHIT on to initialize servers." Togo KI.

Senior Managers at the MOH (Director of Maternal and Child Health for example), and some implementing partners (Global Fund and WHO for example) appeared to be the least informed about WAHIT compared to data technicians.

"WAHIT! No, I really never heard about it." Burkina Faso KI.

"WAHO, yes, but WAHIT, no. I have never met anyone, I do not remember that we talked about that." Burkina Faso KI.

These findings are different from the baseline study conducted in Guinea and Sierra Leone where the knowledge of WAHIT was limited with vague ideas about the missions and scope of work. This is not surprising because the baseline study in Guinea and Sierra Leone was conducted when WAHIT was just starting its operational activities. The present midline study in Togo and Burkina Faso was conducted at a time when WAHIT's activities had already started, giving it more visibility with physical presence. It is obvious that WAHIT's awareness is positively improving throughout the project life cycle and will certainly continue to improve as activities increase. However, the findings from the study show that if the awareness has risen among the MOH partners in both countries, then efforts should be made to increase the knowledge and integration of WAHIT's activities of other national and international development partners involved in the reinforcement of the HIS.

Relevance of WAHIT TA for digital HIS

The KIs in both countries are unanimous about the relevance of WAHIT's technical assistance to support the digital HIS. They are convinced that WAHIT will build the capacity of the stakeholders in the digital HIS. The partners involved in HIS are numerous but have different modes of operation. The importance of WAHIT is easily described by the respondents, especially since there are only a few partners with skills and expertise on digitalizing HIS.

"WAHIT's contribution is most welcome because it helps us fill the gap in technical assistance. At the national level, we have set up health information system directions. Unfortunately, these units do not receive enough support from the MOH and the Ministry in charge of the digital economy does not support them enough either." Burkina Faso KI.

According to the KI, WAHIT's TA is the one that best meets their needs among the partners supporting the MOH. WAHIT's support consisting of assigning highly qualified IT technicians capable of providing the required technical assistance while building the capacity of the beneficiaries.

"It must be said that, truly, among all our partners WAHIT is the only one organization that has technicians who can be called upon to come on site for capacity building. The other partners are mainly providing financial support. WAHIT has the technical expertise. WAHIT is always there to accompany us, in particular providing technical assistance while building the capacity of the national actors." Burkina Faso KI

"WAHIT is a breath of fresh air for the health system because they are addressing a need that was left behind. In most technical units, you will see that existing technical staff needed support. As I said earlier and each time when we identify a need, we call for local/international consultants. The consultant arrives, does the work and leaves (.....) But normally, when the consultant comes to help with your work, you have to be able to reproduce what you learned from him/her. But this was not the case with the previous consultants. WAHIT now has to play that role, which is to build the technical capacity to solve the technical problems that arise with the HIS. It must close out then and not to permanently stay." Togo KI.

Most of the KIs in Burkina Faso and Togo highlighted WAHIT's responsiveness to requests for assistance.

"What makes WAHIT effective for me is (....) I will say their availability to support us. I have already personally worked with them. At first, we asked for a training that WAHIT immediately provided. We all noticed high quality of the training. It was above our expectation. In addition, WAHIT's interventions are aimed to respond to the specific needs of the beneficiaries. When you have difficulties and we ask for help, it seemed natural for them to come and support us. I recently requested their support, they immediately reacted and came up with the solution." Burkina Faso KI

Another aspect of WAHIT that made it relevant is their "practical trainings" based on specific requests or needs. WAHIT, in response to these queries, puts in place a group of experts to address the challenges while training the beneficiaries to address potential future issues.

"What makes WAHIT relevant is the fact that they respond individuals' needs and requests. In fact, the beneficiary identifies his/her specific weaknesses and submits a request to WAHIT. Right after they put together the technical team of engineers and other experts to help address the identified weaknesses. That's really justifies its relevance. This is not a vertical stuff where consultants come to impose (...) No, you elaborate your needs, you identify your shortcomings, and then they come to support fill these gaps. (...). It must also be said that the content of the courses is really very oriented and very practical; it's not academic stuff that comes to you and then nothing after. Whatever they train you on, you see the application immediately. WAHIT's support has enabled us to improve many things." Burkina Faso KI.

The respondents also mentioned the competence of WAHIT's experts and their openness and willingness to share their knowledge and their expertise in HIS.

"WAHIT has a team that is made up of specialists who are very competent. They have the ability and willingness to share their knowledge and experience with local staffs (...) WAHIT works to address the existing issues while reinforcing the skills of the beneficiaries. They make sure that the beneficiaries really have access to some expertise on aspects that many people tend to neglect: notably the security of the information systems (...). It is already a good start that they strengthen the skills of the local teams. In the long term, they will help us to have enough competent resources to be able to implement and strengthen the different information systems." Burkina Faso KI.

One of the KIs in Burkina Faso said: **"WAHIT is not even an option now but it is THE option in Burkina Faso"**.

In summary, all the KIs who have worked with WAHIT were appreciative of the procedures in place for requesting TA, the availability of the team, their promptness to respond to requests and the skills transfer approach during the technical assistance. In the baseline study conducted in Guinea and Sierra Leone, most of the KIs recommended that WAHIT should create its own place and niche between all these existing TA by complementing existing structures. In Togo and Burkina Faso, WAHIT is seen and accepted as the only option. The epidemiological history of these different countries, as well as the difference in time (for the studies) could be a strong explanation for the differences in perception. With the Ebola outbreak in Guinea and Sierra Leone, the two countries received (and still receive) diverse and multiple TAs which is not the case in Togo and in Burkina Faso. Moreover, the baseline study was conducted in Guinea and Sierra Leone during the early phase of WAHIT's activities, while in Togo and Burkina Faso, opinions of the KIs were based more on the reality and individual/collective experiences with WAHIT. The bottom line is that all the countries aspire to TA which allows them to be independent from multiple systems/subsystems and consultants. This is a distinctive advantage of WAHIT which works to build the capacity of local partners to be autonomous in technical assistance of IT.

Potential HIS Improvements with WAHIT TA

The KIs for this midline study regardless of country, previous experience collaborating with WAHIT, knowledge about WAHIT seem to be unanimous about the potential contributions of the project to improving HIS. The suggestions for improvement with the support of WAHIT are:

WAHIT should help the countries in limiting multiple circuits of health information by preventing partners from creating parallel data collection systems, which result in increased workload, limiting efficiency. A national consensus would allow each country to integrate selected indicators for each key domain of the health system.

"Now our main challenge is how to ensure coordination among partners involved in the HIS. We are now having the DHIS2, which should satisfy all partners. It is true that we are not yet at 100% deployment but that's not an excuse for

partners to continue building parallel vertical information systems. Now that we have a system which has the potential to satisfy everyone, it would be necessary to put limited resources together and avoid duplication.” Togo KI.

WAHIT should support countries to have some autonomy in the management of DHIS2.

"As I mentioned, we have to make sure that everyone can take control of the use of DHIS2. Within each major unit should be deployed at least one staff in charge of the DHIS2 and not always rely on a small team that cannot always be available.” Togo KI.

WAHIT should promote the interoperability of the various existing systems through the development of computer applications to merge all data into a single database.

WAHIT could help improve completeness and data quality.

WAHIT could help improve the epidemiological surveillance system for early detection of and response to epidemics. WAHIT should support the compilation and promotion of good practices. This could be done through the creation of a platform where experiences are shared among ECOWAS countries.

WAHIT could support the MOH in reinforcing “HIS Administration”: The infrastructure needed to host DHIS2, help with a viable server and reinforce IT security.

WAHIT should support the harmonization of policies through the development of standards guiding young IT technicians in the development of their capacity.

WAHIT should support ECOWAS countries by implementing a solid metadata for the health system at WAHO.

"WAHIT can solve many problems for me. I told you right now that I do not have a developer (...) But the needs for developers are huge! We need more modules to be developed on DHIS2. For the record, WHO has created a module called “WHO Data Quality Tool”. The module is now integrated which makes it possible to analyze the data on vaccination and HIV/AIDS. So, if we have the competence, we can go above vaccination and HIV and integrate other areas not taken into account by WHO. So, we will ask WAHIT to help us so that we can develop whichever additional module needed to analyze our data.” Togo KI.

Potential technical assistance alternatives

With respect to the existence of potential TA alternatives to WAHIT, opinions are divided in the two countries. While some believe that alternatives exist, others believe that WAHIT is unique. Among the partners mentioned as potential alternatives, WHO is recognized for providing technical assistance, Global Fund for financial assistance, USAID for TA through its various projects and programs and the University of Oslo for DHIS2.

The Ministry in charge of digital development in Burkina Faso is also mentioned as a potential alternative or potential support for sustainability.

"I told you, to my knowledge, most of the activities are Projects-based. Partners come in to implement their Projects. They have areas which they support to be successful. The “REC” Project is an example. At the beginning the project was implemented without involving the MOH. Now as they are transferring the project to the MOH, they are supporting the management of the electronic registry. But this support is focused and specific. You also have "Measure Evaluation" which is establishing now. "Measure evaluation" will apparently support the MOH to acquire servers and others computers. They are also planning to support the MOH in the interoperability of DHIS2, which would allow different databases to communicate with DHIS2. But these supports are “sporadic” and not planned to last over the time.” Burkina Faso KI.

The respondents see WAHIT as a unique support to DHIS2. According to most of the KIs, it would be difficult to have technical assistance similar to what WAHIT is offering in the field of computer science with as much control of DHIS2.

"In fact, the particularity of WAHIT is their "mastery" of DHIS2. I'm talking about IT and interoperability with other applications. Up to today, personally, I am impressed by they work on DHIS2. I'm not sure that in Francophone Africa there are other structures comparable to WAHIT." Burkina Faso KI.

In Togo, WAHIT supported the MOH is resolving specific issues, including the deployment of two servers.

"... we had acquired two servers, and these servers were "dormant" in the warehouse. We did not know what to do because we have no technical staffs to deploy the servers. During one meeting, we were informed that WAHIT's team is visiting Togo. We expressed our needs and by now our servers are running." Togo KI

WAHIT is recognized as a solid TA option by almost all KIs. The KIs did not hesitate to emphasize all of the advantages of WAHIT from its supranational nature, the composition of its team to its mode of operation.

"WAHIT as an option is very effective for us as they accompany us in the implementation. They do not come to implement and then leave." Burkina Faso KI.

The uniqueness of WAHIT, according to the KIs, is its supranational nature. This allows transfer of knowledge and skills as well as experiences and lessons learned. WAHIT brings its TA to countries with the same challenges and difficulties and therefore provides a huge opportunity for sharing best practices. WAHIT's approach is recognized as unique, new and beneficial to HIS stakeholders. WAHIT has a multidisciplinary team in technology with proven skills/expertise and a good knowledge of the health sector in West Africa.

"Frankly, as I told you, their approach is really new. Their approach is new and very beneficial because they do not need to rely on external expertise to come and do the stuff. With other partners, when you express your needs, even if they accept to support, maybe it is financial support or they will be hiring a cabinet to come and do the work, which is not the case for WAHIT. Because they are people who are involved, they work in a field that talks about health, so they master the concepts and their applications (....), in any case, I find that WAHIT's approach is really new and unique." Burkina Faso KI.

Most of the respondents in Burkina Faso also emphasized the responsiveness of WAHIT to requests for assistance. They were appreciative of the procedures in place for requesting TA, the availability of the team, their promptness to respond to requests and the skills transfer approach during the technical assistance.

"In fact, I need to insist on how easy it is to ask for their assistance. In fact, they are cordially-available. They are always willing to explore the best mechanisms to get their technical assistance. If it has to be formalized, they tell you how to do it. If it does not need too, they'll help you. I would say, they maintain friendly relationship with different actors." Burkina Faso KI.

The KIs in both countries also suggested additional services to be offered by WAHIT to aid sustainability. This includes supporting the countries in their capacity building plans to be able to adapt to changing environments. For example, WAHIT should consider training the local staffs in the "development of applications/modules" to be integrated into DHIS2. WAHIT should initiate a platform for sharing experiences, lessons learned and good practices among ECOWAS countries. It would also be beneficial to set-up a meeting space for sharing good practices and experiences in each country.

Perception of WAHIT technical assistance

At the time of the evaluation, WAHIT had already been contacted, at least twice, by the MOHs in both countries (Burkina Faso and Togo) for technical assistance. The requests were essentially focused on supporting the MOH in both

countries to identify various challenges and needs their HIS are facing but also provide on-site technical assistance and training. A workplan/timeframe for TA activities to be provided by WAHIT has even been developed in Burkina Faso.

“We organized a meeting with various stakeholders to identify our challenges and needs. Following the meeting, we requested technical assistance from WAHIT. Their technical team came to Ouagadougou and together we identified what WAHIT could do and what would need additional support (that WAHIT could not do). Then we developed a workplan with clear timeframe which we are implementing now. For the meantime, under WAHIT, I don’t think there is any support in terms of equipment and infrastructure; it is mainly in terms of expertise and training – that’s all.” Burkina Faso KI

WAHIT has been training stakeholders in Burkina Faso in “systems administration” and software installation, server configuration and installation, data backup system, development of specific queries and applications in the context of rapid SMS, database interoperability and IT security. Similarly, the DHIS2 technical team of Burkina Faso received capacity building for API implementation. Therefore, one of the key successes of WAHIT is the variety and specificity of its technical assistance while building the capacity of the beneficiaries. Many KIs in Burkina Faso were very appreciative of WAHIT’s approach to provide solution to IT current issues while building the capacity of the stakeholders.

Another positive characteristic of WAHIT that was mentioned by the KIs is the flexibility of requesting technical assistance. The system developed and implemented in Burkina Faso seems to be very well developed and appreciated by HIS officials. According to the KIs, all requests are developed and submitted online (forms are available online) by HIS staffs. The MOH approves and sends/submits them to WAHO and thereafter WAHIT reaches out to the requestors.

“It is worth saying there is lot of flexibility with WAHIT. We recently submitted a simple request to WAHO, with the Minister’s signature. (...) and WAHIT’s support was immediately aligned. In September 2018 for example, we will get the support for the operationalization of DHIS2 and some of our systems”.

“I forgot to say that, what makes WAHIT the best is, in addition to provide with the solution, they also teach you how to solve your future problems. WAHIT shows us how to achieve results. Unlike others who come to give you a solution and do everything for you to go back to them in the future. That's really the advantage of WAHIT” Burkina Faso KI.

Should Governments pay for WAHIT TA?

Among the KIs in Burkina Faso, 60% recommended that international partners should be contacted to continue funding WAHIT’s technical assistance. Partners such as WHO, CDC, Global Fund, World Bank are the ones often mentioned as they already have some HIS support activities. Since WAHIT is a sub-regional structure, it would be appropriate that the technical assistance be ensured by the contributions from countries. The KIs also shared the opinion that these technical assistance services are expensive.

“It is often related to insufficient funding or well, it is also related to prioritization. Technical Assistance and consultants cost money (...) International partners such as WHO, CDC, the Global Fund have all planned to support the National Health Information System, and finally the World Bank as well. I think the financial partners are there anyway”. Burkina Faso KI

On the other hand, 40% of the KIs are of the view that the government could pay for the technical assistance, especially if the expertise requested does not exist elsewhere and if it could improve data quality. This would require strengthening advocacy with the governments to make sure they understand the importance and urgency of HIS for their planning activities.

“Well I think it is feasible. But perhaps, before going into that direction, it would be interesting to showcase the results of support provided by WAHIT. In case this expertise is not readily available at the national level, it can be taken into account in the national budget without problem.” Burkina Faso KI.

Other participants added:

“Why not? If we can convince people, I think these are things that are feasible. Especially when you know the importance of data. You see for example, everybody is currently talking of malaria incidence which is not decreasing. But this might be largely related to the deficiencies on the data.” Burkina Faso KI.

Request for WAHIT’s technical assistance in the future

KIs with and without prior knowledge, unanimously said they would ask for WAHIT’s support in HIS development.

“In any case, as long as they give us the opportunity, we would always contact them, because the HIS is very dynamic and in constant evolution, so we will really always need them.” Burkina Faso KI.

Electronic data collection is a fast-expanding field, especially with applications eHealth, and the deployment of telemedicine applications that require totally innovative teleconferencing equipment, is often mentioned to justify future requests for WAHIT’s TA. However, the greatest concern remains the interoperability of systems allowing data exchange between applications. KIs also expressed expecting a lot of support from WAHIT in the improvement of data quality.

“Yes, yes, yes, yes, yes at the moment we need them, as I said, because we need capacity building. How to integrate a DHIS application from the DHIS-integrated application, APIs, everything that is programming at the DHIS2 level to ensure interoperability between DHIS and other applications or to automate or improve DHIS2 dashboards, we need them.” Togo KI.

WAHO provides financial and human resources support following WAHIT’s provision of assistance. WAHIT has a team of specialists who are competent in their respective fields, are available and have the ability to share their knowledge with local teams. Among the partners, WAHIT seems to be the only organization that has its own technicians who can be called upon on short notice for capacity building.

“They are available, they are technically good too. They have the skills and we cannot hide that. Then, thirdly, it should be said that we felt a certain availability on their part during the training anyway. They wanted to give us as much satisfaction as possible, but they were limited by time.” Togo KI.

The majority of KIs are willing to recommend WAHIT to other countries or institutions, as WAHIT has helped them resolve issues related to HIS.

“Of course, they trained us, they made us discover other things, many countries will necessarily be at our level or where we were. So, it’s normal that we tell them to proceed and use WAHIT to move forward.” Togo KI.

The KIs believe that WAHIT could be beneficial to other regions outside of West Africa. The positive experience with WAHIT’s employees was integral to forming that positive opinion. The institutional anchoring to WAHO and the operating method makes even those who are unaware of WAHIT very positive and optimistic.

“Of course, of course! when we exchange with our colleagues from other countries, we see that we are having the same realities, however, we don’t have the same opportunities. We are often asked how we managed to overcome some IT challenges. We often say that we received technical assistance from this partner and or that partner, so now with the experience we acquired from WAHIT, we are trying to share with them (...).” Burkina Faso KI.

Comparison of WAHIT TA to other TA models

Satisfaction with WAHIT's achievements prompted KIs to say that WAHIT's technical assistance is better and above all others. The results of WAHIT's technical support are tangible and the satisfaction of the KIs is also reinforced by the fact that they are themselves "actors" of the TA.

"I think it's above the all, isn't it? Without being hypocritical, I think it is better. It's better than the others because the results are palpable. When you do something by yourself you jump immediately on different aspects and services that you can offer." Burkina Faso KI

WAHIT's methods include organizing a specific orientation during their technical assistance. They have a sub-regional expertise training with operating methods far better than many other assistance services. The modalities for activating TA and assistance in identifying needs are simple and highly appreciated. In addition, it is a competent team with multidisciplinary experts made available to countries.

"What is interesting is that, as far as WAHIT's assistance is concerned, there is really a specific orientation. It's pretty clear, you really have an idea of the skills of the people you're dealing with. And on the other hand, the modalities for activating the assistance are fairly simple. You can even work with the WAHIT team to define your needs and better formalize them. And on the other hand, when you receive assistance from a sub-regional body, let's say, it is much better (...)." Burkina Faso KI.

Another distinctive aspect of WAHIT is the support it provides to make the beneficiaries autonomous and independent. WAHIT TA not only supports implementation but also works towards the autonomy of technicians. This is different from many other consultants who work without involving the local MOH stakeholders, perpetuating the dependence on TA. WAHIT experts' knowledge of the sub-regional context is a definite comparative advantage over others.

"No, the advantage of this type of assistance is that it is really context-based. Our countries have so many similarities that if the assistance comes from a local or regional, it became clearer. Sometimes we receive TA from other partners and we feel that it does not apply to our own system. Sometimes it takes time to those consultants to even understand our system before they get ready to technically support us. So, for me, it is good to have this local and regional expertise." Burkina Faso KI.

The majority of KIs strongly believe that WAHIT will be successful. Its model and approach which consists of meeting the units of the MOH, identifying specific needs, difficulties and then developing an action plan to tackle the issues are unique. In addition, the availability and responsiveness of the WAHIT members make the model an asset and an opportunity for HIS in the countries.

"Well, (...) to be truthful, at the beginning when they came to meet us, I thought it was going to be just another..., eh; they come, meet, collect the information and disappear. But I realized that WAHIT is really available and very proactive. At the end, we were behind. Because as soon as you identify your needs and submit your request, they try to analyze with you, they try to understand certain points, they ask for specificity and precision. Once those aspects are clear, you go to the operational planning and so-on. It's innovative, it's really innovative." Burkina Faso KI.

One of WAHIT's particularities is its sub-regional anchoring within WAHO, which is an asset for its success. This provides WAHIT with an overview of the countries that make up this organization and could potentially lead to the development of standards for all of the ECOWAS countries.

Challenges obtaining WAHIT technical assistance

No major challenge was mentioned for obtaining technical assistance from WAHIT. There is no administrative burden and the team can be contacted directly with requests.

"No, personally, as I told you, they give us a form to complete. In reality, there is no administrative burden. This means, you have the possibility to contact the team directly through the request at your disposal. So, frankly, it's more fluid." Burkina Faso KI.

Some respondents noted that the number of technicians within WAHIT seems insufficient and therefore cannot cover all the countries. This leads to a restriction in the duration of their interventions as well as monitoring of ongoing activities or intermittent interruptions.

"Well, the WAHIT's staffs are overwhelmed (...). Sometimes we have the impression that they are understaffed and therefore struggle to follow up on everything we do together. They should work with other stakeholders on the ground. Otherwise, of course it will be a good opportunity to work with them to develop and standardize the Health Information System." Burkina Faso KI.

For all the respondents, the challenge will be how to ensure sustainability of WAHIT's interventions. To overcome this potential challenge, they mentioned the support of WAHO, WHO, UEMOA and country-governments to mobilize the necessary resources.

KIs suggested that WAHIT should make itself known to partners, show them the services they have to offer and their skills. WAHIT could visit the countries and assess the situation in terms of information systems to better understand the challenges faced in these countries. They can then organize trainings or workshops so that they have more regional visibility.

Institutional anchoring and partnership

Advantages of WAHO's supervision of WAHIT

WAHIT's affiliation to WAHO is, according to all the respondents (31/32) in Burkina Faso and Togo, an asset and an opportunity that benefits WAHIT and facilitates the sustainability of its activities. WAHO already has collaborative relationships and financial partnerships that may be beneficial to WAHIT.

"This is an excellent decision as it is carried by an organization that has the legitimacy and recognition of the Countries and Governments. With WAHO's senior decision-makers and health Ministers, they have a general assembly where they make decisions; meaning that if WAHO makes decisions, it is the countries that make decisions." Togo KI

"It should even a requirement because countries unfortunately are isolated in terms of information systems. However, in the event of an epidemic and major problems, the response must be global and sub-regional, so it is the in-country integration of these Information Systems that should be led by WAHO (...)." Burkina Faso KI.

WAHIT, for some respondents, should be the technical arm of health information systems in West Africa and endeavor to ensure that all countries reach the same level through experience sharing.

Advantages of the WAHO/USAID/Palladium partnership

According to KIs, the advantage of this partnership is first and foremost, "mutualization" at all levels; the sharing of knowledge, resources and experience. Partners support HIS in terms of design and IT equipment as well. The partners will each bring on board their own experience and benefit from each other's experience. WAHO's good field knowledge, USAID's extensive presence in Africa and Palladium's technical expertise make this consortium a solid entity. It makes it possible to bring together many resources for improvements, funding and technical support. Each partner brings to the table its own specialty that allows the consortium to be viable. As one participant said:

"The consortium allows the partners and beneficiaries to share resources, because if we intervene separately, the risk of duplicating is very high. Whereas a wide partnership like this allows on the one hand to pool resources, to be much more

efficient and on the other hand to ensure the quality of the TA. If the partners are truly engaged for the long time, this could eventually lead to sustainability. And we also think if there are many partners around the table, in case one or two withdraw, there will always be one or two more who will continue the TA. Since this activity is implemented through WAHO, which is a sub-regional organization composed of different WA governments, it is possible that at some point the various governments would eventually bear the costs inherent in the TA.” Burkina Faso KI.

Some respondents believe this is an opportunity that WAHO must seize to consolidate its regional position as information is strategic and fundamental for decision making. However, some participants believe that since the HIS issue is quite broad and involves several partners and areas, especially management of epidemics such as Ebola, it would be wise to open up the consortium further to make it a regional partnership with other stakeholders supporting the health sector.

Future Challenges for Governments and WAHO

The challenge for the governments will be to maintain and sustain the TA provided by WAHIT after the project ends. Many KIs recommended that the WA governments and WAHO should start integration of health information systems by strengthening the national countries in IT and management of information systems. The respondents also recommended the establishment of a “meta-database” for the sub-region with an integrated routine data collection and disease surveillance system. The challenge for WAHO is to continue to be responsive to national requests and issues. WAHO should be strategic in analyzing the real and specific needs per country before developing a global strategic approach for TA. Such a global strategic approach should obviously integrate all aspects related to the management of human resources at both country and regional levels, hence the importance of creating a “regional pool of experts” with the highest knowledge of the WA environment. The KIs also recommended that WAHO designate local focal points per country. One key and repeated point discussed during this study is the sustainability of the TA. One KI suggested that WAHO should take advantage of the ongoing WAHIT technical assistance to set up a pool of IT specialists who would support the private pharmaceutical industries, therefore generating financial resources for the organization.

“(…) I guess these issues were discussed before starting WAHIT. Certainly, the TA provided is great and at the right direction. Good! But the eternal question of sovereignty, autonomy and auto-financing is still there. Will WAHIT maintain its activities if there is no fund from USAID? Will ECOWAS countries eventually mobilize their internal resources and take over to mitigate the dependence? The challenge of being able to survive after USAID funding ends.” Burkina Faso KI

Another recommendation is to coordinate with the governments and ensure that the HIS staffs are motivated to remain and work for the MOH. Then the transfer of competences and skills would enable local teams to take charge of the management and administration of HIS within a constant evolving environment.

“I think that the transfer of competence and skills is more important than punctually resolving occurring problems and then leaving. In Africa, we say I would rather prefer to be taught to fish than receiving fish every time I need to eat.” Togo KI.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The Health Information System of Burkina Faso and Togo are all designed around DHIS2 with different experiences; Burkina Faso introduced DHIS2 in 2013 and Togo more recently in 2017. However, the challenges in both countries in terms of digital HIS are similar in several respects and can be summarized as follows:

- Data quality (completeness, promptness, consistency, etc.);
- Multiplicity of data sources;
- Insufficient human resources in quantity and in quality;
- Inadequate data analysis/use of data;
- Insufficient funding for HIS;
- Insufficient infrastructure and equipment (computers, servers, software, maintenance problems, data security, electricity, internet connection, etc.)

WAHIT is now well known in both countries with a high level of satisfaction. The first experiences of technical support were very well appreciated and the WAHIT model seems to convince partners who find it a viable option that they would be willing to not only use in the future but also recommend to other colleagues/countries outside West Africa. WAHIT's anchoring within WAHO is a major asset and a guarantee of success because it automatically benefits from WAHO's credit and audience. A few concerns about WAHIT's interventions are related to sustainability. It is not yet certain in both countries how WAHIT's successes could be maintained after the project ends.

Specific Recommendations

- Use multiple avenues to inform different stakeholders of what WAHIT is, what it can do, and how international partners and countries can tap into the technical assistance the team may provide. This could include meetings that WAHO has already scheduled in the countries and/or joining local HIS taskforces;
- Engage more senior health officials in the management of data quality issues;
- Develop and standardize the Health Information System across ECOWAS countries. This would enable the implementation of health system metadata within the WAHO space and provide a global response to an outbreak by making available timely and relevant information to the national and regional decision-makers;
- Create a platform for promoting and sharing good practices/experiences among ECOWAS countries;
- Promote the interoperability of the different existing systems through the development of specific applications which capitalize/computerize all data in a single database.
- Provide more consistent trainings with tutorial guides and give recognition through awarding official certificates.
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- Review the duration of field interventions to allow sufficient time for adequate skills transfer and/or problems resolution;
- Reinforce capacity building in IT security, maintenance, internet connectivity, and data hosting in the countries;
- Broaden the range of activities beyond TA and have a holistic view of the health information system ranging from data collection, administration and management to integration of infrastructure and equipment (computers, servers, etc.)

- Once the technical area of support is identified, one way to organize the WAHIT TA is to start with a short-term TA visit, followed by intermittent visits as needed. Additionally, providing remote assistance to ensure smooth implementation of recommendations and know-how transfer.
- Create a regional “pool” of trainers and TA which WAHO would tap on whenever needs are;
- Appoint ‘local-in-country focal points’ for WAHO and WAHIT;
- Regularly (at least once a year) host a regional meeting of IT and HIS partners to discuss issues, challenges and lessons learned;
- WAHIT should coordinate and be member of all the existing partnerships and “taskforces” at the country and regional levels.

ANNEXES

Annex I List of respondents per Country

Annex 2 – Mapping of Research Questions, Instrument Design, and Type of Study Participant

Annex 3 – Instruments Used